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EXAMINER	
CUTLER, ALBERT H	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/762,872	Applicant(s) LARNER ET AL.	
	Examiner Albert H. Cutler	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to application 10/762,872 filed on January 21, 2004. Claims 1-27 are pending in the application and have been examined by the examiner.

Claim Objections

2. Claim 12 is objected to because of the following informalities: Lack of clarity and precision. Claim 12 recites, "first frames are captured and presented". Please change claim 12 to recite, "**the** first frames are captured and presented" in order to preserve clarity since first frames are introduced in claim 1. Appropriate correction is required.

3. Claim 26 is objected to because of the following informalities: Lack of clarity and precision. Claim 26 recites, "configured to present first frames". Please change claim 26 to recite, "configured to present **the** first frames" in order to preserve clarity since first frames are introduced in claim 14. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kido et al.(US Patent Application Publication 2005/0052553) in view of Hamada et al.(US Patent 5,943,512).

Consider claim 1, Kido et al. teach:

A method for automatically maintaining focus and exposure settings in a digital imaging device(figure 18, paragraphs 0166-0178), comprising:

activating a continuous focus mode(paragraphs 0051, 0087-0094, "full-time AF") in the digital imaging device("digital camera", paragraphs 0040-0057);

capturing and analyzing first frames having a first resolution until a scene change is detected(S602, figure 18, paragraphs 0126, 0178. In high speed readout, recording, display mode, frames having a lower resolution are captured until the movement of the main subject decreases below a threshold(i.e. a scene change). See S609-S611, figure 18, paragraphs 0170-0172. Note that steps S501-S511 of figure 5 and S601-S611 of figure 6 correspond.); and

capturing second frames having a second resolution greater than the first resolution(S603, paragraphs 0125, 0178. In high definition readout, recording, display mode, frames having a higher resolution are captured.) and adjusting the focus settings based on the second frames(See paragraphs 0091, 0094. The camera performs a subject-tracking AF operation in which the focus is adjusted based on the position of the subject. This operation is not dependent on high-resolution or high-speed mode. So if the camera goes from capturing low-resolution images(i.e. first frames) to capturing high-resolution images(i.e. second frames), the subject-tracking AF operation is performed the entire time, adjusting the focus based on the first frames and then based on the second frames.) when the scene change has been detected(When the scene change has been detected(S609-S611, figure 18), the camera begins to capture high-resolution frames(i.e. second frames, S603, figure 18).).

Kido et al. further teach of different modes of exposure(paragraphs 0133-0137). However, Kido et al. do not explicitly teach that the exposure modes are continuous, or that they are activated with the continuous focus mode.

Hamada et al. is similar to Kido et al. in that Hamada et al. teach of using a digital camera(figures 7 and 8) which contains auto-focus(#52, figure 9). Hamada et al. is further similar in that the auto-focus is activated by an input signal(#51, figure 9, column 12, lines 50-52). Hamada et al. is further similar in that the auto-focus is continuous(As long as the shutter button is at half-press("Yes", #51, figure 9), the auto-focus will continue(#52, figure 9) until the shutter button is released("No", #51, figure 9) or fully pressed(#55, figure 9).)

However, in addition to the teachings of Kido et al., Hamada et al. teach of performing continuous exposure(#53, figure 9) when performing continuous focus(#52, figure 9), wherein the continuous focus and continuous exposure are activated by the same control(#51, figure 9) See column 12, lines 50-64.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform continuous exposure as taught by Hamada et al. with the continuous focus taught by Kido et al. for the benefit of obtaining a more desirable image captured with the optimum combination of aperture value and shutter speed based on the current brightness of the object(Hamada et al., column 12, lines 59-61).

Consider claim 2, and as applied to claim 1 above, Kido et al. further teach that the continuous focus mode is activated in response to an input signal(The camera performs continuous auto-focus when in the "moving image capture mode", paragraph 0094. This moving image capture mode is activated by the press of a mode selection button(i.e. an input signal), paragraph 0054.)

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure activated by the half-press of a shutter button concurrently with continuous focus(see claim 1 rationale).

Consider claim 3, and as applied to claim 2 above, Kido et al. further teach a shutter button being depressed to an intermediate position(The camera performs, "AF

control and the like upon detecting that the shutter release button(20) is placed in the half-press(i.e. intermediate) position(S1). See paragraph 0051.).

However, Kido et al. do not explicitly teach that continuous focus and exposure is activated due to the shutter button being depressed halfway.

Hamada et al. teach of continuous focus and exposure activated by the half-press of a shutter button(see claim 1 rationale).

Consider claim 4, and as applied to claim 2 above, Kido et al. further teach that the input signal comprises selection by a user of a continuous focus mode option in the digital imaging device(The user selects a continuous focus mode option by selecting moving image capture mode, paragraph 0094. This moving image capture mode is activated by the press of a mode selection button(i.e. an input signal), paragraph 0054.).

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure activated by the half-press of a shutter button concurrently with continuous focus(see claim 1 rationale).

Consider claim 5, and as applied to claim 2 above, Kido et al. do not explicitly teach the input signal comprises sensing that a user is holding the digital imaging device in a predetermined manner.

However, Hamada et al. teach that the input signal comprises sensing that a user is holding the digital imaging device in a predetermined manner(Hamada et al. teach of

providing the input signal via a partial-press of the shutter button(i.e. holding the digital imaging device in a predetermined manner), column 12, lines 50-64.).

Consider claim 6, and as applied to claim 2 above, Kido et al. do not explicitly teach that the input signal comprises sensing that a shutter button of the digital imaging device is being lightly touched by a user.

However, Hamada et al. teach that the input signal comprises sensing that a shutter button of the digital imaging device is being lightly touched by a user(The input signal is activated by a partial-press(i.e. a light tough of the shutter button) of the shutter button, as opposed to a full-press(i.e. a heavy touch) of the shutter button, column 12, lines 50-64.).

Consider claim 7, and as applied to claim 1 above, Kido et al. teach analyzing first frames comprises summing the absolute value of pixel differences between at least two first frames(Kido et al. teaches of summing the absolute values of the differences in brightness values of pixels between first and second frames, AY and BY. See paragraphs 98-109, figures 5a and 6.).

Consider claim 8, and as applied to claim 1 above, Kido et al. further teach analyzing first frames comprises comparing an aggregate luminance of at least two first frames(The sum of the brightness values(i.e. aggregate luminance) of all pixels

contained corresponding areas of the two frames, AY and BY, are obtained and compared. See paragraphs 98-109, figures 5a and 6a.).

Consider claim 9, and as applied to claim 1 above, Kido et al. teach analyzing first frames comprises detecting a single moving element in an otherwise static scene(The speed of a single moving element in comparison to the rest of the static frame is analyzed to determine whether high-speed or high-resolution photography should be used, paragraphs 0170-0171.).

Consider claim 10, and as applied to claim 1 above, Kido et al. further teach that the second frames comprise full-resolution readouts from an imaging sensor having an odd number of fields(The imaging sensor contains a Bayer array(i.e. it has an odd number of fields, paragraph 0061). Second frames are recorded at high resolution(see claim 1 rationale). High-resolution recording involves reading out an image 360 pixels wide by 240 pixels high, paragraph 0125. The resolution of the display is 360 pixels wide by 240 pixels high, paragraph 0119. Therefore, when high-resolution images are read out, the image sensor reads out frames having full-resolution of the display.).

Consider claim 11, and as applied to claim 1 above, Kido et al. further teach of performing coarse focus adjustments in the digital imaging device based on first frames after the scene change has been detected and prior to adjusting the focus settings based on the second frames(Kido et al. teach of performing continuous focus(i.e.

course focus, see claim 1 rationale). Kido et al. further teach of detecting a scene change in steps S610 and S611 of figure 18. After the scene change is detected in S611, the camera will still be performing continuous focus using the first frames. This is prior to adjusting the continuous focus based on the second frames, which are read out, recorded, and displayed in step S603.).

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure(i.e. course exposure) activated by the half-press of a shutter button concurrently with continuous focus(see claim 1 rationale).

Consider claim 12, and as applied to claim 1 above, Kido et al. further teach a live view mode of the digital imaging device is active(paragraphs 0117-0122) in which first frames(i.e. low resolution frames) are captured and presented on a display of the digital imaging device both before and after the scene change has been detected(Low resolution frames are presented before and during the scene change detection, paragraphs 0117-0122. The low resolution frames are also presented after the scene change in steps S610 and S611 until the high resolution frames are readout, recorded, and displayed in step S603.)the first frames being captured(First frames are captured prior to the scene change. See claim 1 rationale.) in addition to the second frames during adjustment of the focus settings based on the second frames(The second frames are captured, recorded, and displayed in step S603 after the scene change. The adjustment of the focus settings based on the second frames takes place once the beginning of the capture, record, and display of the second frames occurs in step S603.

Therefore, the second frames(i.e. high-resolution frames) are captured in addition to the capture of the first frames, albeit after the capture of the first frames(i.e. low-resolution frames), during adjustment of the focus and exposure settings based on the second frames.).

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure(i.e. course exposure) activated by the half-press of a shutter button concurrently with continuous focus(see claim 1 rationale).

Consider claim 13, and as applied to claim 1 above, Kido et al. further teach that the digital imaging device is a digital camera("digital camera", paragraphs 0040-0057).

Consider claim 14, Kido et al. teach:

A digital imaging device("digital camera", paragraphs 0040-0057, figures 1-4), comprising:

an imaging module to convert optical images to digital image frames(see paragraphs 0040-0057), the imaging module being configurable to produce first digital image frames at a first resolution(S602, figure 18, paragraphs 0126, 0178. In high speed readout, recording, display mode, first frames having a lower resolution are captured until the movement of the main subject decreases below a threshold(i.e. a scene change). See S609-S611, figure 18, paragraphs 0170-0172. Note that steps S501-S511 of figure 5 and S601-S611 of figure 6 correspond.) and second digital image frames at a second resolution(S603, paragraphs 0125, 0178. In high definition readout,

recording, display modes, second frames having a higher resolution are captured.), wherein the second resolution is greater than the first resolution(See paragraphs 0125 and 0126.);

scene analysis logic that analyzes first digital image frames to detect a scene change(A motion detector detects a scene change based on two image frames, paragraphs 0098-0109.); and

focus and adjustment logic configured to adjust focus and exposure settings of the digital imaging device based on second digital image frames(See paragraphs 0091, 0094. The camera performs a subject-tracking AF operation in which the focus is adjusted based on the position of the subject. This operation is not dependent on high-resolution or high-speed mode. So if the camera goes from capturing low-resolution images(i.e. first frames) to capturing high-resolution images(i.e. second frames), the subject-tracking AF operation is performed the entire time, adjusting the focus based on the first frames and then based on the second frames.), when the scene analysis logic has detected the scene change(When the scene change has been detected(S609-S611, figure 18), the camera begins to capture high-resolution frames(i.e. second frames, S603, figure 18).).

Kido et al. further teach of different modes of exposure(paragraphs 0133-0137). However, Kido et al. do not explicitly teach that the exposure modes are continuous, or that they are activated with the continuous focus mode.

Hamada et al. is similar to Kido et al. in that Hamada et al. teach of using a digital camera(figures 7 and 8) which contains auto-focus(#52, figure 9). Hamada et al. is

further similar in that the auto-focus is activated by an input signal(#51, figure 9, column 12, lines 50-52). Hamada et al. is further similar in that the auto-focus is continuous(As long as the shutter button is at half-press("Yes", #51, figure 9), the auto-focus will continue(#52, figure 9) until the shutter button is released("No", #51, figure 9) or fully pressed(#55, figure 9).)

However, in addition to the teachings of Kido et al., Hamada et al. teach of performing continuous exposure(#53, figure 9) when performing continuous focus(#52, figure 9), wherein the continuous focus and continuous exposure are activated by the same control(#51, figure 9). See column 12, lines 50-64.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform continuous exposure as taught by Hamada et al. with the continuous focus based on the second digital image frames taught by Kido et al. for the benefit of obtaining a more desirable image captured with the optimum combination of aperture value and shutter speed based on the current brightness of the object(Hamada et al., column 12, lines 59-61).

Consider claim 15, and as applied to claim 14 above, Kido et al further teach that the digital imaging device has a continuous focus mode(See paragraphs 0091, 0094. The camera performs a subject-tracking AF operation in which the focus is adjusted based on the position of the subject.).

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure activated by the half-press of a shutter button concurrently with continuous focus(see claim 14 rationale).

Consider claim 16, and as applied to claim 15 above Kido et al. teach of an input control to activate the continuous focus mode(The camera performs continuous auto-focus when in the "moving image capture mode", paragraph 0094. This moving image capture mode is activated by the press of a mode selection button(i.e. an input control), paragraph 0054.)

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure activated by the half-press of a shutter button concurrently with continuous focus(see claim 1 rationale).

Consider claim 17, and as applied to claim 15 above, Kido et al. do not explicitly teach of an attitude sensing subsystem to detect how the digital imaging device is being held by a user, or activation logic configured to activate the continuous focus and exposure mode, when the attitude sensing subsystem detects that the digital imaging device is being held in a predetermined manner.

Hamada et al. teach of an attitude sensing subsystem to detect how the digital imaging device is being held by a user(Accelerometers(4x and 4y, of figure 1) determine if the camera is shaking in the x or y direction(i.e. how much the user is shaking the device), column 12, lines 61-64.), and activation logic configured to activate the

continuous focus and exposure mode(#52, #53, figure 9, column 12, lines 47-64), when the attitude sensing subsystem detects that the digital imaging device is being held in a predetermined manner(The AF and AE functions of the camera are activated at the same time(i.e. when) as when the attitude sensing subsystem(4x and 4y) detects that the digital imaging device is being held in a predetermined manner(i.e. shaking or not), column 12, lines 47-64, #54, figure 9.).

Consider claim 18, and as applied to claim 17, Kido et al. do not explicitly teach of accelerometers or gyroscopes.

However, Hamada et al. teach that the attitude sensing subsystem comprises an accelerometer(4x or 4y, figure 1, column 12, lines 47-64).

Consider claim 19, and as applied to claim 15 above, Kido et al. further teach of a shutter button(20, figure 3), and of a tactile sensing subsystem to detect whether the shutter button is being lightly touched by a user(A half-press(i.e. light touch) or full-press(i.e. heavy touch) is detected, paragraph 0051.).

However, Kido et al. do not explicitly teach of activation logic configured to activate the continuous focus and exposure mode, when the tactile sensing subsystem detects that the shutter button is being lightly touched by the user.

Hamada et al. teach of activation logic configured to activate the continuous focus and exposure mode, when the tactile sensing subsystem detects that the shutter button is being lightly touched by the user(Hamada et al. teach of activating continuous

focus(#52, figure 9) and continuous exposure(#53, figure 9) when the tactile sensing subsystem detects that the shutter button is partly pressed(i.e. lightly touched, #51, figure 9), column 12, lines 50-64.).

Consider claim 20, and as applied to claim 15 above, Kido et al. further teach of a shutter button having an intermediate position and an image capture position(paragraph 0051).

However, Kido et al. do not explicitly teach activation logic configured to activate the continuous focus and exposure mode, when the shutter button is depressed to the intermediate position.

Hamada et al. teach activation logic configured to activate the continuous focus and exposure mode, when the shutter button is depressed to the intermediate position(Hamada et al. teach of activating continuous focus(#52, figure 9) and continuous exposure(#53, figure 9) upon detection that the shutter button is partly pressed(i.e. depressed to an intermediate position, #51, figure 9), column 12, lines 50-64.).

Consider claim 21, and as applied to claim 14 above, Kido et al. teach the scene analysis logic is configured to sum the absolute value of pixel differences between at least two first frames(Kido et al. teaches of summing the absolute values of the differences in brightness values of pixels between first and second frames, AY and BY. See paragraphs 98-109, figures 5a and 6.).

Consider claim 22, and as applied to claim 14 above, Kido et al. further teach scene analysis logic is configured to compare an aggregate luminance of at least two first frames(The sum of the brightness values(i.e. aggregate luminance) of all pixels contained corresponding areas of the two frames, AY and BY, are obtained and compared. See paragraphs 98-109, figures 5a and 6a.).

Consider claim 23, and as applied to claim 14 above, Kido et al. further teach the scene analysis logic is configured to detect a single moving element in an otherwise static scene(The speed of a single moving element in comparison to the rest of the static frame is analyzed to determine whether high-speed or high-resolution photography should be used, paragraphs 0170-0171.).

Consider claim 24, and as applied to claim 14 above, Kido et al. further teach that the imaging module(figure 4) comprises an imaging sensor(CCD, 303, figure 4) and the imaging module is configured to produce second frames comprising one of full-resolution imaging-sensor readouts(Second frames are recorded at high resolution(see claim 14 rationale). High-resolution recording involves reading out an image 360 pixels wide by 240 pixels high, paragraph 0125. The resolution of the display is 360 pixels wide by 240 pixels high, paragraph 0119. Therefore, when high-resolution images are read out, the image sensor reads out frames having full-resolution of the display.).

Consider claim 25, and as applied to claim 24 above, Kido et al. further teach that the imaging sensor(303) has an odd number of fields(The imaging sensor is a Bayer array, paragraph 0061) and the imaging module is configured to produce second frames comprising readouts from a single field of the imaging sensor(The image sensor(303) is comprised of 2560 columns and 1920 rows of pixels, paragraph 0061. The second frames only read out 360 pixels wide by 240 pixels high(i.e. a single field of the sensor is read out as opposed to the entire sensor), paragraph 0125.).

Consider claim 26, and as applied to claim 14 above, Kido et al further teach:

a display(EVF, 11, figure 4);

display control logic configured to present first frames on the display, when a live view mode of the digital imaging device is active(paragraphs 0117-0122); and

wherein the imaging module is configured to capture first frames(First frames are captured prior to the scene change. See claim 14 rationale.) in addition to second frames during adjustment of the focus and exposure settings by the focus and exposure adjustment logic(The second frames are captured, recorded, and displayed in step S603 after the scene change. The adjustment of the focus settings based on the second frames takes place once the beginning of the capture, record, and display of the second frames occurs in step S603. Therefore, the second frames(i.e. high-resolution frames) are captured in addition to the capture of the first frames, albeit after the capture of the first frames(i.e. low-resolution frames), during adjustment of the focus settings based on the second frames.), when the live view mode is active(The live view

mode is active during both the high-speed readout, record, and display of the camera and the high-resolution readout, record, and display of the camera, paragraphs 0117-0122.).

Kido et al. do not explicitly teach of continuous exposure. However, Hamada et al. teach of continuous exposure(i.e. course exposure) activated by the half-press of a shutter button concurrently with continuous focus(see claim 1 rationale).

Consider claim 27 Kido et al. further teach:

A digital imaging device("digital camera", paragraphs 0040-0057, figures 1-4), comprising:

means for converting optical images to digital image frames(see paragraphs 0040-0057), the means for converting optical images to digital image frames being configurable to produce first digital image frames at a first resolution(S602, figure 18, paragraphs 0126, 0178. In high speed readout, recording, display mode, first frames having a lower resolution are captured until the movement of the main subject decreases below a threshold(i.e. a scene change). See S609-S611, figure 18, paragraphs 0170-0172. Note that steps S501-S511 of figure 5 and S601-S611 of figure 6 correspond.) and second digital image frames at a second resolution(S603, paragraphs 0125, 0178. In high definition readout, recording, display mode, second frames having a higher resolution are captured.), wherein the second resolution is greater than the first resolution(See paragraphs 0125 and 0126.)

means for analyzing first digital image frames to detect a scene change(A motion detector detects a scene change based on two image frames, paragraphs 0098-0109.); and

means for adjusting focus settings of the digital imaging device based on second digital image frames(See paragraphs 0091, 0094. The camera performs a subject-tracking AF operation in which the focus is adjusted based on the position of the subject. This operation is not dependent on high-resolution or high-speed mode. So if the camera goes from capturing low-resolution images(i.e. first frames) to capturing high-resolution images(i.e. second frames), the subject-tracking AF operation is performed the entire time, adjusting the focus based on the first frames and then based on the second frames.), when the means for analyzing first digital image frames has detected the scene change(When the scene change has been detected(S609-S611, figure 18), the camera begins to capture high-resolution frames(i.e. second frames, S603, figure 18).).

Kido et al. further teach of different modes of exposure(paragraphs 0133-0137). However, Kido et al. do not explicitly teach of adjusting exposure based on the second digital image frames.

Hamada et al. is similar to Kido et al. in that Hamada et al. teach of using a digital camera(figures 7 and 8) which contains auto-focus(#52, figure 9). Hamada et al. is further similar in that the auto-focus is activated by an input signal(#51, figure 9, column 12, lines 50-52). Hamada et al. is further similar in that the auto-focus is continuous(As long as the shutter button is at half-press("Yes", #51, figure 9), the auto-focus will

continue(#52, figure 9) until the shutter button is released("No", #51, figure 9) or fully pressed(#55, figure 9).)

However, in addition to the teachings of Kido et al., Hamada et al. teach of performing continuous exposure(#53, figure 9) when performing continuous focus(#52, figure 9), wherein the continuous focus and continuous exposure are activated by the same control(#51, figure 9) See column 12, lines 50-64.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform continuous exposure as taught by Hamada et al. with the continuous focus based on the second digital image frames taught by Kido et al. for the benefit of obtaining a more desirable image captured with the optimum combination of aperture value and shutter speed based on the current brightness of the object(Hamada et al., column 12, lines 59-61).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER